

Here's my response to Roger's economic questions.

1. It would be most helpful if you could provide an outline or flow chart of the steps the FERC staff will go through in analyzing and evaluating the economics of Project 2100. I assume that the FERC staff would go through separate economic analyses for a project's hydropower, water supply, and flood control functions and then combine those into a total project economic summary.

Response

The time frame for Staff's economic analysis of the Oroville Project is 2005-2007. At this time, I don't have an outline or a flow chart as to how FERC would view the project's economics. I'll be getting most of the information I would need to prepare such an outline in 2005 when DWR files its application. As you may know, the FERC license application requires an applicant to submit a large amount of information, including data on project operations and economics. Besides the information in the FERC license exhibits, DWR will be submitting a draft applicant prepared environmental assessment as part of this ALP process that should have some economic and operations information.

FERC will not be putting a separate cost on flood control when it calculates its project net power benefit number. But the analysis will account for power and water supply functions.

2. Project's Hydropower Economics. Focusing only on the project's hydropower economics, please consider the following:

a. Valuation of the Real Power from the Project.

Attached is an Excel spreadsheet of Energy Generation at Oroville Facilities for calendar years 1982 through 2001 provided by the licensee California Department of Water Resources. During that 20-year period, the project generated on average 2,448,950 MWh per year.

Please describe how FERC staff would use this data in its analysis. For example, does the FERC staff just take an appropriate \$/MWh value based upon today's energy prices, say \$55/MWh (value of \$134,692,000 per year), or does it use a more complex analysis?

Response

As I say above, I don't now have an outline for how I would do a net power benefit study for the Oroville Project. The approach you mention in your question is used for projects where the economics is relatively straightforward. Two aspects of Oroville that make economic valuation complex are: (1) the project has a pumped storage component, which consumes energy in pumping and is hard to value and (2) the project operates to supply water, consuming power during pumping.

If I can uncouple the water supply function from the power aspects of the project, it would make the net benefit analysis simpler. But, at this time, I don't see how to do that.

b. Valuation of Ancillary Services.

I understand that FERC defines ancillary services as those services necessary to support the transmission of electric power from seller to purchaser given the obligations of control areas and transmitting utilities within those control areas to maintain reliable operations of the interconnected transmission system. The following are examples of types of ancillary services:

Scheduling

System control and dispatch

Reactive supply, voltage control (VAr), frequency response

Energy imbalance

Regulation (the ability to regulate resources to match load on a moment-to-moment basis)

Spinning operating reserves (operates on 10-minutes notice)

Non-spinning operating reserves

Replacement reserve (California Independent System Operator concept – operates on a one-hour notice)

Because the Lake Oroville generating complex has a very large reservoir with pump storage capability, the value of its ancillary services on an annual basis can be considerable. What ancillary services does FERC staff consider and how are they valued?

Response

FERC quantifies ancillary benefits when a defined market exists for them. Otherwise, it handles them qualitatively.

c. Project Pump Storage Operations.

How will FERC staff value the project's pump storage operations? Since the project's pump storage operations appear to have significant impacts to water temperature in

Thermalito Afterbay thereby impacting agricultural water uses, recreation, and fisheries, what operating scenarios will FERC staff consider in its analysis?

Response

As I say above, valuing pumped storage operations is extremely hard. First of all, pumped storage generators consume more energy than they produce. So they are only economical if they pump with energy that cost less than the energy they produce when they operate, or if they get credit for supplying the power system with ancillary benefits.

Again, we wouldn't develop the details of how we'd look at the Oroville project until the 2005-2007 timeframe. So, I don't now know the operating scenarios we'd consider.

d. Costs of Project's Hydropower Operations.

What are the project's costs that are considered in the economic analysis? How would such costs be allocated among hydropower, water supply, and flood control functions for Project 2100?

You indicated at the last Plenary Group meeting via telephone, that project costs are limited to those costs incurred by the project within the project's geographic boundaries. For example, the electric costs DWR incurs to pump water at the Sacramento-San Joaquin Delta and over the mountains to Southern California would not be project costs for purposes of the FERC staff analysis. Is this correct?

Response

The costs we'd look at in our analysis include the cost of meeting the outstanding debt on the project along with the cost to operate and maintain the project.

What I said (or, if I didn't, what I meant to say on the phone) was that the primary focus of FERC in its net benefit study of the project is on the Oroville facilities not the total State Water Project. That doesn't mean that we will not have to consider any system costs to do our analysis. It all depends on how the project is operated and financed. For example, if the Oroville water contractors have an existing obligation at the project to pay certain costs instead of paying a charge for each acre foot of water supplied, then we may have to consider the costs DWR pays to meet its obligations under those contracts in our analysis.

3. Examples of FERC staff's economic analysis of other projects.

Please provide the Plenary Group by April 2003 if possible with copies of the FERC staff's economic analyses of at least two FERC projects anywhere in the USA with large reservoirs.

Response

Two examples of FERC economic analyses for projects with large reservoirs can be found in the Environmental Assessments for these projects:

Cowlitz River Hydro Project, Washington, FERC Project no. 2016, June 2001

another (done during a collaborative effort)

Cabinet Gorge and Noxon Rapids, Idaho and Montana (FERC 2058 and 2075), February 2000